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10/658,703

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Santi Kulprathipanja

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PATENT SERVICES

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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/658,703
Filing Date: September 09, 2003
Appellant(s): KULPRATHIPANJA ET AL.

Arthur E. Gooding
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 05/15/2008 appealing from the Office action mailed 10/19/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US Patent 3,303,233 Jones 02/07/1967.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-23 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jones (US Patent 3,303,233).

Jones' invention provides an alkylating agent which when condensed with an alkylatable aromatic compound produces an alkylate having a structure suitable for the production of biologically soft detergents therefrom without sacrifice in the yield of product, effectiveness of the final detergent product or its water solubility (See column 2, lines 59-65). The alkylate intermediate, if an alkylaryl hydrocarbon, may be sulfonated and thereafter neutralized with a suitable alkaline base, such as sodium hydroxide to form an alkylaryl sulfonate (anionic) type of detergent which is most widely used for household, commercial and industrial purposes (See column 3, lines 22-28).

The alkyl benzene disclosed in Jones' invention is produced by using normal paraffins separated on molecular sieve, dehydrogenating, and reacting with benzene under typical operating conditions. Alkyl benzene sulfonate in Jones' invention is also produced by sulfonating alkyl benzene under typical operating conditions. Thus, alkyl benzene and alkyl benzene sulfonate produced by Jones' invention are similar to the claimed compositions.

In the event any differences can be shown for the product of the product-by-process claims 1-23, as opposed to the product taught by the reference to Jones, such differences would have been obvious to one of the ordinary skill in the art as a routine

modification of the product in the absence of a showing of unexpected results. See In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985).

(10) Response to Argument

In the argument on page 4 (paragraph 2), the Appellant argues,

“The examiner has likened all alkylbenzene production processes and alkylbenzene products into one category of biologically soft detergents. To begin with, the Appellants' attorney incorrectly stated “[t]his solid catalyst is a physically constraining catalyst which limits undesired reactions and produces a much higher LAB content in the product”. The Appellants' attorney meant to state that “[t]his is a physically constraining catalyst which limits undesired reactions and produces an MAB product.” The product is much different from Jones. Jones emphasizes the linearity and strives for a high degree of linearity of the alkyl group. The present invention has found that lightly branched alkyl groups are equally biodegradable and can be more economically produced”.

The Appellant's argument is not persuasive because Jones uses a relatively straight chain structure as shown in column 2, line 35, capable of biological degradation (See column 2, lines 30-58). Clearly, the structure in line 35 is a “lightly branched C₈-C₂₈ acyclic paraffin” as claimed by the Appellant. Thus, the alkyl benzene produced in Jones process is similar to the modified alkyl benzene (MAB) claimed by the Appellant.

In the argument on page 5 (paragraph 1), the Appellant argues,

“The present invention is not anticipated by Jones because elements of the present invention are not present nor hinted at in the reference, such as the use of silicalite to separate a lightly branched paraffin from a hydrocarbon mixture, the use of non-normal desorbents for recovering the lightly branched paraffins from the silicalite, the use of a catalytic dehydrogenation process without resorting to halogenation, and the use of a solid acid catalyst for the alkylation step”.

The Appellant's argument is not persuasive because the Appellant uses an adsorbent comprising silicalite, which is silica-rich aluminosilicate and Jones prefers aluminosilicate (See column 5, lines 4-6); the Appellant claims a desorbent stream comprising at least one component selected from the group consisting of a C₅-C₈ cycloparaffin, a C₅-C₈ normal paraffin, and a C₅-C₈ branched paraffin and Jones uses normal pentane (C₅ normal paraffin) as a desorbent (See column 10, lines 3-6). Jones discloses that inclusion of a halogen in the dehydrogenation reaction mixture radically alters the course of the reaction from endothermic to exothermic, thereby minimizing isomerization of the paraffinic feedstock and the resulting olefins to their branched chain analogs (See column 6, lines 36-42). Clearly, the dehydrogenation step of Jones reads on the claimed dehydrogenation process. Jones discloses use of mineral acids (liquid) as well as anhydrous aluminum chloride and aluminum bromide (solids) and other acid-acting catalysts (See column 8, lines 17-34) for alkylation.

In the argument on page 5 (paragraph 2), The Appellant argues,

“The present invention does not meet the obviousness test because the present invention uses lightly branched paraffins, when Jones teaches the use of high purity normal paraffins, and Jones stresses the need for high percent of normal paraffins. The present invention allows the use of non-normal C₅-C₈ paraffins for desorption, whereas Jones teaches the use of isopentane to purge the adsorbent before using n-pentane to desorb the normal paraffins. Jones is teaching the removal of non-normal paraffins, including lightly branched paraffins, before proceeding with the dehydrogenation step. In the dehydrogenation step, Jones teaches the use of halogenation, followed by a dehydrohalogenation step. This teaches away from the use of branched paraffins or olefins, and teaches away from using a catalytic dehydrogenation process, which the present invention uses. Jones further teaches the use of a liquid acid catalyst for a homogeneous acid catalyzed alkylation process. The present invention uses a solid acid catalyst that restricts the ability of isomerization of the alkyl group during the alkylation process. This is not taught or suggested by Jones”.

The Appellant's argument is not persuasive because Jones uses a relatively straight chain structure as shown in column 2, line 35, capable of biological degradation (See column 2, lines 30-58). Clearly, the structure in line 35 is a “lightly branched C₈-C₂₈ acyclic paraffin” as claimed by the Appellant. The Appellant claims a desorbent stream comprising at least one component selected from the group consisting of a C₅-C₈ cycloparaffin, a C₅-C₈ normal paraffin, and a C₅-C₈ branched paraffin and Jones uses iso- and normal pentane (C₅ paraffin) as desorbent (See column 9, lines 70-75; column 10, lines 3-6). Jones discloses that inclusion of a halogen in the dehydrogenation reaction mixture radically alters the course of the reaction from endothermic to

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exothermic, thereby minimizing isomerization of the paraffinic feedstock and the resulting olefins to their branched chain analogs (See column 6, lines 36-42). The claimed dehydrogenation process does not exclude presence of halogen. Jones discloses use of mineral acids (liquid) as well as anhydrous aluminum chloride and aluminum bromide (solids) and other acid-acting catalysts (See column 8, lines 17-34) for alkylation.

In the event any differences can be shown for the product of the product-by-process claims 1-23, as opposed to the product taught by the reference to Jones, such differences would have been obvious to one of the ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results. See In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985).

In conclusion, the claimed invention is anticipated/obvious over Jones.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Prem C Singh/

Prem C Singh

Examiner, Art Unit 1797

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